Budget Allocation

Notes

The information below, regarding the budget allocation design, is pertinent to the studies conducted in Li, Bailey, Kenrick, & Linsenmeier (2002) as well as other papers (e.g., Li & Kenrick, 2006).

A *necessity* is something for which people prioritize having a minimum level. Once people acquire a minimum level of necessities, they tend to place increasingly less value on acquiring any more of the necessities, because at that point, having other things (*luxuries*) brings greater utility. Thus, necessities tend to be acquired first, ahead of other items – this happens when a budget is low, or highly constrained, and as such a person cannot afford to acquire much of anything. As needs for necessities are satisfied, additional purchasing power (afforded by an expanding budget) tends to be allocated less toward further necessities and more toward acquiring luxuries. Whereas necessities are traits for which marginal spending decreases as budget increases, luxuries are traits for which marginal spending increases. To see (statistically examine) if items might be necessities or luxuries, 1) compare spending at the low budget to see which items are prioritized more than others up front (one can either strongly demonstrate that a hypothesized necessity is preferred significantly more than every other item, or somewhat more weakly indicate that a hypothesized necessity is preferred more than the average of all other items), and 2) use multiple budgets to compare how people allocate their lower versus higher budgets (spending on necessities should decrease as budget increases, spending on luxuries should increase). In Li (2007) and Li, Valentine, & Patel (2011), we used only a low budget to see what traits people tended to heavily favor up front – these are likely to be necessities. These and other papers can be found on the website http://www.normli.com.

Methods of budget allocation for the first 2 studies of Li et al. (2002):

1) Using a paper survey, subjects allocated budgets of 20, 40, and 60 mate dollars across 10 traits (physically attractive, creative, friendly/sociable, hardworking, intelligent, interesting personality, romantic, sense of humor, special (non-work related) talents, and yearly income) to design their ideal long-term mate (for the Li & Kenrick (2006) paper, this was also done for short-term mates). A linear purchasing schedule was used such that each mate dollar buys 10 percentile points on any trait.

2) Using a computer program (Excel Visual Basic), subjects allocated budgets of 5, 10, and 15 mate dollars across 5 traits (physical attractiveness, creativity, liveliness, kindness, and social level) to design their ideal long-term mate (short-term mate in Li & Kenrick, 2006). To address potential ceiling effects and to reflect real life, where it becomes increasingly difficult to obtain further gains on any particular trait (e.g., a more physically attractive mate), an exponentially increasing purchase schedule was used such that every 2 mate dollars increases a trait's percentile level from where it currently is to halfway to 100. So, the first mate dollar spent on say, creativity, brings the percentile level from 0 to 25. The second brings it up to 50 (halfway from 0 to 100). The third brings it up to 67.5, and then the fourth brings it up to 75 (halfway from 50 to 100)…

Thus far, we've used either 5 or 10 traits in any study, but you can use any number you wish (though I'm guessing it could get messy with more than 10 traits). I've always set the budget sizes so that the low budget can purchase a 20th to 25th percentile level across all traits (a relatively low-value mate), the medium budget can afford around a 40th to 50th percentile level across all traits (a fairly average mate), and the high budget can afford a 60th to 70th percentile across all the traits (a very desirable mate).

In the survey below, the 5 traits correspond to those used in Studies 2 and 3 of Li et al. (2002) and in other papers. Their definitions follow from a survey that asked Arizona State University undergraduates to describe what they perceived as 0th percentile and 50th percentile for each trait. The instructions given are for a low budget allocation. For this 5-trait example, you would simply increase the budget to 15 and 20 to get medium and high budgets, respectively. When subjects allocate multiple budgets (thereby making "budget" a within-subjects variable), we've analyzed their "marginal" budgets, rather than total budgets. This allows us to see how subjects spend their first set

of X mate dollars (the low budget) versus their second set of X mate dollars (their marginal medium budget) versus their third set of X mate dollars (their marginal high budget) as opposed to comparing their cumulative totals (the low vs. medium vs. high budget), which include the previous budgets' allocations. You calculate the marginal budgets by subtracting the low budget purchases from the medium budget purchases and the medium budget purchases from the high budget purchases. So, if someone has budgets of 10, 20, and 30 to allocate and spends 3, 5, and 6 (for low, medium, and high budgets) on physical attractiveness, they've spent 3 of their first set of 10 mate dollars (30%), 2 of their second 10 mate dollars (20%), and 1 of their third 10 mate dollars (10%) on this trait. In this case, even though total spending is increasing, the marginal spending is decreasing (i.e., this trait is decreasing in importance as budget, or overall mate quality, goes up).

Thus far, we've collected budget allocation data using 3 formats:

1) Paper survey – people circle deciles; this is easy to administer but an exponentially increasing purchase schedule may be difficult to use.
2) Qualtrics online survey – people select exact percentiles; this is easy to administer but again, an exponentially increasing purchase schedule may be difficult to use.
3) Custom Excel Visual Basic program (only works on Excel 2003 or earlier) – people click on UP and DOWN arrows underneath traits to make their purchases according to either a linear or exponential purchasing schedule.

Basic Budget Allocation Instructions

These are materials used in Li (2007) and Li, Valentine, & Patel (2011), and in parts of Li, Bailey, Kenrick, & Linsenmeier (2002) and Li & Kenrick (2006).

Introduction

For this survey, you will be using percentile scales to describe the characteristics pertaining to your ideal romantic partners. The percentile scales correspond to how a person measures against all others of the same sex that you might encounter on a busy street during a typical week. For example, suppose you are male and that your relevant population of potential mates are women. . . Let's look at the characteristic of height. If we could rank all the women by their height, then the tallest woman would be at the 100th percentile of height - she is taller than 100% of all the women. The woman at the 50th percentile of height is taller than 50% of all the women - she is at the median, or roughly, average. The shortest woman is at the 0th percentile of height - she is taller than 0% of all the women.

There will be 5 characteristics that describe your romantic partner. The characteristics sheet tells you what each characteristic means and what a typical 50th percentile and 0th percentile person might be like. Please take a minute to read them over.

All your responses are anonymous, so please respond as honestly and candidly as possible (do not worry about how politically correct or socially desirable your selections are). Please take your time because you may have some tough choices to make.

The population of comparison is anyone who might be seen on a very busy street during a given week.

Social level
A person's social situation or social class – what kind of job they have or intend to have (if at all), their education, living arrangement, car, the type of clothes they (can afford to) wear, etc.

- 50^{th} percentile (average) = average community college or college student, works part-time job with flex hours, has a used car, lives in apartment with a roommate
- 0^{th} percentile = person with the lowest social level seen on the busy street - no job and no intention of holding one, no education, no car, etc.

Creativity
A person's level of artistic ability and originality – how artistically talented they are and the extent to which they stray off the beaten path.

- 50^{th} percentile (average) = may occasionally demonstrate originality, perhaps able to write a poem or play a song
- 0^{th} percentile = lowest creativity of anyone seen on the busy street - no creativity or artistic talent at all

Kindness
A person's benevolence or willingness to be helpful to others.

- 50^{th} percentile (average) = usually helpful to close friends, especially when there is time
- 0^{th} percentile = least kind person seen on the busy street - no willingness to help others

Liveliness
How lively a person's mannerisms or behavior is, and how outgoing they are.

- 50^{th} percentile (average) = moderately lively, energetic at times, somewhat extroverted
- 0^{th} percentile = least lively person seen on the busy street

Physical attractiveness
A person's physical appearance (i.e., body & face). Does not include how they dress.

- 50^{th} percentile (average) = pleasant-looking, may have a nice feature or two, reasonable face, but they're not striking
- 0^{th} percentile = least physically attractive person seen on the busy street

Please design your ideal *long-term mate* by circling a percentile level for each of the following 5 characteristics. Assume that this is someone who you will be with for many years and possibly marry and have a family with. Of course, you may not be currently looking for someone like this, but for this part of the survey, assume that you are. To prevent you from choosing a "10" in everything, you will have to pay for each of your selections. Assume that each level is also your cost in "mate dollars" (example: 50th percentile = level 5 = 5 mate dollars; 80th percentile = level 8 = 8 mate dollars). You have only ***10*** mate dollars to spend, so make sure that all the numbers you circle add up to **10**. If you do not circle a level for a characteristic, it will be assumed that the bottom level is chosen for that characteristic!

	Characteristics that describe your long-term mate				
Percentile	Physical Attractiveness	Creativity	Kindness	Liveliness	Social Level
100th = ***the top***	10	10	10	10	10
90th = above 90%	9	9	9	9	9
80th = above 80%	8	8	8	8	8
70th = above 70%	7	7	7	7	7
60th = above 60%	6	6	6	6	6
50th - ***middle***	5	5	5	5	5
40th = above 40%	4	4	4	4	4
30th = above 30%	3	3	3	3	3
20th = above 20%	2	2	2	2	2
10th = above 10%	1	1	1	1	1
0th - ***the bottom***	0	0	0	0	0

- Add up the value of your selections (must equal 10): _____

Please design your ideal *short-term mate* by circling a percentile level for each of the following 5 characteristics. Assume that this is someone who you will have casual sex with, perhaps for one evening. Of course, you may not be currently looking for someone like this, but for this part of the survey, assume that you are. To prevent you from choosing a "10" in everything, you will have to pay for each of your selections. Assume that each level is also your cost in "mate dollars" (example: 50th percentile = level 5 = 5 mate dollars; 80th percentile = level 8 = 8 mate dollars). You have only ***10*** mate dollars to spend, so make sure that all the numbers you circle add up to **10**. If you do not circle a level for a characteristic, it will be assumed that the bottom level is chosen for that characteristic!

	Characteristics that describe your short-term mate				
Percentile	Physical Attractiveness	Creativity	Kindness	Liveliness	Social Level
100th = ***the top***	10	10	10	10	10
90th = above 90%	9	9	9	9	9
80th = above 80%	8	8	8	8	8
70th = above 70%	7	7	7	7	7
60th = above 60%	6	6	6	6	6
50th - ***middle***	5	5	5	5	5
40th = above 40%	4	4	4	4	4
30th = above 30%	3	3	3	3	3
20th = above 20%	2	2	2	2	2
10th = above 10%	1	1	1	1	1
0th - ***the bottom***	0	0	0	0	0

- Add up the value of your selections (must equal 10): _____

Instructions for Exponential Budget Allocation

Hi, my name is _____ and I'm your experimenter today. Please click on the Begin button and follow along as I read the instructions on the next screen.

Introduction

For the first part of this experiment, we want you to imagine that you are looking for a marriage partner – *someone who you would like to have a close relationship and settle down with for the long-term, to get married with, and perhaps to raise a family.* Of course, you may or may not be currently looking for such a person in your life, but for the first part of this experiment, we want you to put yourself in the frame of mind as if you are looking for such a partner. And, in a few minutes, you will get to design your ideal marriage partner!

On the following screens, you will be using percentile scales to describe the characteristics pertaining to your ideal marriage partner. To make sure you understand percentile scales, let's go through an example. Suppose you are a male and that your relevant population of potential mates are women. . . Let's look at the characteristic of height. If we could rank all the women in this world by their height, then the tallest woman in the entire world would be at the 100th percentile of height - she is taller than 100% of all women in this world! The shortest woman in the entire world is at the 0th percentile of height - she is taller than 0% of all women in this world. The woman at the 50th percentile of height is taller than exactly 50% of all women in this world. She is at the median, or roughly, she is average.

Anyone above the 50th percentile is above average. For example, a woman who is at the 75th percentile is taller than 75% of all women in this world.

Similarly, anyone below the 50th percentile is below average. For example, a woman who is at the 25th percentile on height, is taller than only 25% of all women in this world. Does that make sense?

Budgets

There will be 5 characteristics that describe your ideal marriage partner. What you have to do is select the percentile level that your ideal mate should be, on each characteristic. The catch. . .is that you will have to pay for your selections with a given budget of "mate dollars."

Go ahead and click on the "OK" button. Indicate the sex that you normally consider for potential mates. Click on "OK" and let's check out the Demo.

Demo

This is the marriage partner design screen that you'll see. Five characteristics will be shown at the bottom of the graph. Each of them will start at the 0th percentile. On the very bottom of the screen is the budget box. This is important because it tells you how many mate dollars you have to spend in total, how much you've spent, and how much you have remaining. Do you see that?

To increase the percentile level of a characteristic, you simply click on the up arrow of that characteristic. Go ahead and click once on the up arrow under Characteristic 1. The first click on any characteristic will bring it up to the 25th percentile, at a cost of 1 mate dollar. Go ahead and click again on the up arrow under Characteristic 1. The 2nd click on any characteristic will bring it up to the 50th percentile or an average person, again at a cost of 1 mate dollar. Notice how the budget box shows 2 mate dollars spent and 3 remaining.

Once your mate is at the 50th percentile for a characteristic, any subsequent up-click will increase your mate exponentially less. Go ahead and click again to see what I mean. Your mate should now be at the 62.5 percentile for Characteristic 1, and you will have spent 3 mate dollars and have 2 remaining. Go ahead and click the up arrow for Characteristic 1 again. Now, your mate is at the 75th percentile for Characteristic 1, and you should have spent 4 mate dollars and have 1 remaining.

You can also click down, if you want to decrease the percentile level. Go ahead and click once on the down arrow for Characteristic 1. Now your mate is back to the 62.5 percentile on Characteristic 1, and you have 2 mate dollars remaining.

As you can see, the computer will keep track of your choices and your budget, and it won't let you spend more than your total budget. Go ahead and play around with this for a minute, so you get a feel for how it works. You can click on the different characteristics as well. [Give subject a minute to experiment]

The experiment
[Read carefully!]

During the first part of this experiment, you'll get to design an ideal marriage partner under 3 different budgets. Your mate will start at the 0^{th} percentile for each characteristic, which means that they are below every other female in the entire world, on each characteristic. Basically, what you'll want to do is look at the 5 characteristics and use the up and down arrows to select the combination of percentile levels that would, in your opinion, give you the *best possible* marriage partner for the budget that you have been given.

And, after you've gotten it just right, we want you to think about if you actually met someone with the profile that you just designed, given your budget, and how likely you would be to accept them as a marriage partner. Do this by clicking on the appropriate choice in the box towards the upper right hand corner. [Point it out and make sure they do this] Then, hit the OK button.

[Hand out the characteristics sheet]
These are the 5 characteristics that you will be able to purchase with your mate dollars. This sheet tells you what each characteristic means, and what a typical 50^{th} percentile and 0th percentile person might be like. Please take a minute to read them over.
[Give the subject a minute to look them over, let them refer to this sheet during the experiment].

Any questions?

Since all your responses will be completely anonymous, please respond as honestly and candidly as possible. Whatever you do, don't worry about how politically correct your selections are. The mate design survey is designed to be fun, and should take you about 10-15 minutes to complete. Please take your time because you may have some tough choices to make! In any case, do not hurry - not only would you be providing meaningless data, but you will be required to stay for the full half hour anyway.

When you're designing your ideal mates, keep in mind what the percentiles mean. Let me just remind you that the 0^{th} percentile is the lowest woman in the world. If you leave your ideal mate at the 0^{th} percentile for any characteristic, then that person would be the lowest female in the entire world on that characteristic.

Any questions so far? OK, hit Start and design your 3 ideal marriage partners. When you get done with that, just keep following the instructions on the screen. If you have any questions, just let me know.